Fatal Neisseria sicca endocarditis

Sommerstein, R ; Ramsay, D ; Dubuis, O ; Waser, S ; Aebersold, F ; Vogt, M

DOI: https://doi.org/10.1007/s15010-012-0393-8

Infection (2013) 41:747–749
DOI 10.1007/s15010-012-0393-8

IMAGES IN INFECTION

Fatal *Neisseria sicca* endocarditis

R. Sommerstein · D. Ramsay · O. Dubuis · S. Waser · F. Aebersold · M. Vogt

Received: 26 October 2012 / Accepted: 16 December 2012 / Published online: 8 January 2013

Dear Editor

A 75-year-old previously healthy woman was admitted to our hospital with a subacute stroke. Before, she had complained of unspecific symptoms including arthralgia, myalgia, cephalgia and vertigo of 4-week duration. Despite absence of an obvious infectious focus, an empiric outpatient treatment at a different clinic with ciprofloxacin and then doxycycline was administered but shown to be ineffective. At admission, the patient was in a diminished general state but afebrile. There were signs of right sided hemiparesis and a slurred speech. She was hypotensive and tachycardic but there were no signs of congestive heart failure. Clinically, no infectious focus was detectable. A CT scan of the brain (Fig. 1a) confirmed several hypointense cortical lesions. Kidney sonography (Fig. 1b) to investigate microhematuria showed a circumscript lesion on the lower left pole (arrow) most likely corresponding to a kidney infarct. Trans-esophagal echocardiography (TEE) (video) revealed large polypoid vegetations on the aortic valve. *Neisseria sicca* grew in six of six blood cultures and was confirmed upon sequencing of the 16 S rRNA gene. The patient deteriorated rapidly despite adequate antibiotic therapy with amoxicillin/clavulanic acid and gentamicin with consecutive embolic phenomena occurring in the skin (Fig. 1c), the cerebellum (Fig. 1d), the conjunctives (Fig. 1e) and the lungs (Fig. 1f). Surgery was declined by the patient and she eventually died 8 days after admission. Post mortem examination confirmed endocarditis of the aortic valve (Fig. 1g), kidney infarction (Fig. 1h) and embolism into further sites.

Infective endocarditis is a life threatening disease and the mortality currently remains high at around 15 % [1]. To our knowledge only 17 cases of endocarditis caused by *Neisseria sicca* have been described in the literature [2]. The Gram-negative diplococcus *Neisseria sicca* is a member of the family *Neisseriaceae* and a commensal inhabitant of the human upper respiratory tract [3].

In this patient, there was no clinical or radiological evidence of a preceding or concomitant upper respiratory tract infection. These findings were confirmed by post mortem studies and thus provide evidence that Neisseria sicca endocarditis was not caused by spreading of a pre-existing upper respiratory tract infection.

Most cases of *Neisseria sicca* endocarditis have been described in intravenous drug users and patients with underlying heart disease. Prolonged fever and embolic phenomena occurred in the majority of the cases (>90 %). Surgery was required in half of the patients with *Neisseria* species endocarditis due to large vegetations with concurrent embolism and destruction of the valve.

In patients rapidly treated with surgical and appropriate antibiotics mortality is reported to be low with good neurologic outcome.

In this case the microbe was susceptible to the empiric amoxicillin/clavulanic acid therapy at a mean inhibitory concentration of 1.0 mg/l and to ceftriaxone at 0.047 mg/l.

Electronic supplementary material The online version of this article (doi:10.1007/s15010-012-0393-8) contains supplementary material, which is available to authorized users.

R. Sommerstein (✉) · D. Ramsay · S. Waser · M. Vogt
Department of Internal Medicine, Cantonal Hospital Zug, Zug, Switzerland
e-mail: rami.sommerstein@usz.ch

O. Dubuis
Viollier AG, Basel, Switzerland

F. Aebersold
Department of Pathology, Cantonal Hospital Lucerne, Lucerne, Switzerland

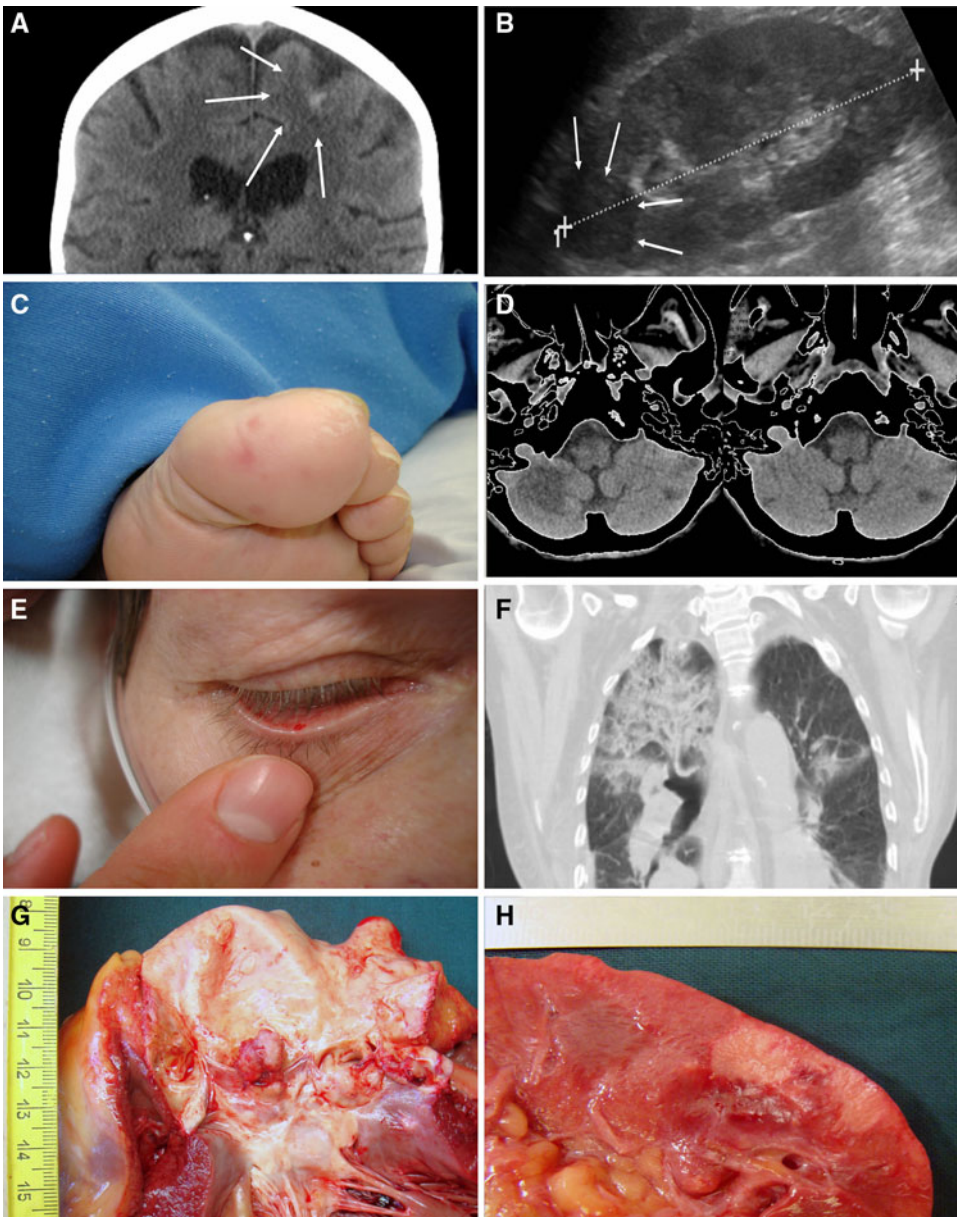

Fig. 1 Spectrum of the clinical, sonographical, radiological and pathological extent of the disease

The microbe was intermediary susceptible to ciprofloxacine and resistant to penicllin and rifampicin.

Neisseria sicca has also rarely been described as causative agent in patients with meningitis, discitis, osteomyelitis, septic arthritis and both immunocomprimised and immunocompetent hosts [2, 4–6]. In conclusion we describe for the first time for this rare entity a post mortem analysis that enables to link clinical, radiological and microbiological data to classical autopsy findings.

Informed consent

The patient gave informed consent that

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Acknowledgments We would like to thank Prof. Rainer Weber, MD from the Clinic of Infectious Diseases and Hospital Hygiene,

Department Internal Medicine, University Hospital of Zurich, Switzerland for critical proofreading of the Manuscript. This work was supported by the Hans-Paul Wälchli Foundation for clinical research (Lugano, Switzerland). The funding source had no role in any stage of the manuscript development.

Conflict of interest The authors declare that there is no conflict of interest that interferes with the publication of this report. There are no financial conflicts of interest in this report.

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